CHAPTER 2 CONTENTS

2. DESIGN POLICIES AND STANDARDS

2.1. General Design Policy Information

The Georgia Department of Transportation (GDOT) Design Policy Manual establishes uniform policies and procedures for GDOT roadway design functions. This document is intended to serve as a basic design reference for GDOT designers and consultants under contract with GDOT, and it documents the various design policies, practices, and other guidelines specific to GDOT in a single location. This Manual is primarily written to provide design guidance for projects involving the new construction or major reconstruction of roadways.

Guidelines, design policies, and practices discussed in this Manual in **Chapter 11, Other Project Types** specifically address the following types of other projects:

- roadway resurfacing, restoration, or rehabilitation (3R) projects
- preventative maintenance (PM) projects
- bridge fencing and bridge jacking projects
- intelligent transportation system (ITS) projects
- signing and pavement marking projects
- traffic signal projects
- noise barrier projects
- guardrail and/or other barrier projects

Guidelines, design policies and practices discussed in this Manual in **Chapter 14, Lighting** specifically address roadway or area lighting in a stand-alone lighting project or within another GDOT project.

Unless stated otherwise, the policies in this manual apply to permanent construction of Georgia roads and highways. Different controls and criteria may be applicable to temporary facilities.

2.1.1. Sources of Design Policies and Procedures

With the exception of projects described in **Chapter 11** of this manual, at a minimum, projects shall meet all American Association of State Highway and Transportation Officials (AASHTO) guidelines and requirements. The design guidelines set forth in the AASHTO publication, *A Policy on the Geometric Design of Highways and Streets* (*Green Book)*, are accepted by GDOT as the basic design criteria for the state highway system. The *GDOT Design Policy Manual* provides more specific, and in some cases, more selective guidance for the design of roads on the state highway system.

For additional design guidance and criteria, refer to the most current edition of the following publications, unless a specific version is noted. These publications, including the website addresses (url) for resources available online, are cited in the **References** section of this Manual:

American Association of State Highway and Transportation Officials (AASHTO)

- *A Policy on Geometric Design of Highways and Streets (Green Book)*
- *A Policy on Design Standards---Interstate System*
- *Guide for the Development of Bicycle Facilities*
- *Guide for High-Occupancy Vehicle (HOV) Facilities*
- *Guide for Park-and-Ride Facilities*
- *Guide Specifications for Horizontally Curved Steel Girder Highway Bridges*
- *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)*
- *Highway-Rail Crossing Elimination and Consolidation*
- *Roadside Design Guide*
- *Roadway Lighting Design Guide*
- *Standard Specifications for Highway Bridges*

American Railway Engineering and Maintenance of Way Association (AREMA)

- *Manual for Railway Engineering*

Federal Highway Administration (FHWA)

- *Americans with Disabilities Act (ADA) and Transportation Enhancements (TE)*
- *Flexibility in Highway Design*
- *Guidance on Traffic Control Devices at Highway-Rail Grade Crossings*
- *Highway-Railroad Grade Crossings: A Guide to Consolidation and Closure*
- *Manual on Uniform Traffic Control Devices (MUTCD)*
- *Roundabouts: An Informational Guide FHWA-RD-00-67*
- *Value Engineering and The Federal Highway Administration (Website)*
- *Roadway Lighting Handbook*

Georgia Department of Transportation (GDOT)

- *Bridge and Structures Policy Manual*
- *Environmental Procedures Manual*
- *Manual on Drainage Design for Highways*
- *Construction Standards and Details*
- *Context Sensitive Design Online Manual*
- *Pavement Design Manual*
- *Pedestrian and Streetscape Guide*
- *Plan Development Process (PDP)*
- *Plan Presentation Guide*
- *Regulations for Driveway and Encroachment Control*
- *Standard Specification Book*
- *Traffic Analysis and Design Manual*
- *Traffic Signal Design Guidelines*
- *Utility Accommodation Policy and Standards Manual*

Georgia Soil and Water Conservation Commission (GSWCC)

- *Manual for Erosion and Sediment Control in Georgia*

Illuminating Engineering Society of North America (IESNA)

- *Guideline for Security Lighting for People, Property and Public Spaces*
- *Lighting Handbook, 9th Edition*
- *Lighting For Parking Facilities*
- *Recommended Lighting for Walkways*
- *Recommended Lighting for Walkways and Class 1 Bikeways*
- *Roadway Lighting ANSI Approved*
- *Roadway Sign Lighting*
- *Tunnel Lighting*

Institute of Transportation Engineers (ITE)

- *Manual of Uniform Transportation Engineering Studies*
- *Trip Generation Handbook*

National Cooperative Highway Research Program (NCHRP)

- *Modern Roundabout Practices [Synthesis 264]*
- *Design Speed, Operating Speed, and Posted Speed Practices [NCHRP Report 504]*
- *Evaluating Intersection Improvements: An Engineering Study Guide [NCHRP Report 457]*
- *Impacts of Access Management Techniques [NCHRP Project 3-52]*
- *Recommended Procedures for the Safety Performance Evaluation of Highway Features [Report 350]*

National Fire Protection Association (NFPA)

- *National Electrical Code [NFPA-70]*

Texas Transportation Institute (TTI)

- *Grade Separations - When Do We Separate? Highway-Rail Crossing Conference*

Transportation Research Board (TRB)

- *Highway Capacity Manual*

2.2. Exceptions to Design Standards and Policies

2.2.1. Design Exceptions

If design features of a new construction or reconstruction project do not meet controlling criteria in the current edition of the AASHTO *Green Book* and the AASHTO publication, *A Policy on Design Standards - Interstate System*, as adopted by the Federal Highway Administration (FHWA), approval to build or retain the feature is required. For interstate projects, the FHWA is the agency which grants design exceptions. For all other projects, both Federal and State funded, the Chief Engineer grants design exceptions.

Guidance specific to non-interstate roadway resurfacing, restoration, or rehabilitation (3R) projects is provided in this Manual in **Chapter 11, Other Project Types**.

The following controlling criteria shall meet the requirements of the aforementioned AASHTO publications:

- horizontal alignment
- vertical alignment
- lane width
- shoulder width
- vertical grades
- cross slopes
- stopping sight distance
- super-elevation rates
- horizontal clearance (does not include clear zone)
- speed design
- vertical clearance
- bridge width
- bridge structural capacity

To obtain a design exception, a formal request shall be submitted using the format and procedures outlined in the *GDOT Plan Development Process* (*PDP*)[1], Chapter 8.

2.2.2. Design Variances

Whenever a new construction or reconstruction project contains nonstandard items that are not controlling criteria or do not meet GDOT policy/guidelines, a design variance shall be requested from the Chief Engineer. To obtain a design variance, a formal request shall be submitted using the format and procedures outlined in the *GDOT PDP*, Chapter 8.

2.3. Context Sensitive Design

Context Sensitive Design (CSD) is a process for achieving design excellence by developing transportation solutions that require continuous, collaborative communication and consensus between transportation agencies, professionals, and any and all stakeholders. A common goal of CSD projects is to develop a facility that is harmonious with the community, and preserves aesthetics, history and the environmental resources, while integrating these innovative approaches with traditional transportation goals for safety and performance.

Refer to the *GDOT Context Sensitive Design Online Manual*[2] for additional information on communication strategies, design flexibility, environmental sensitivity, and stakeholder involvement for developing successful context-sensitive solutions.

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[1] GDOT. *Plan Development Process (PDP)*.
The current version of this document is available on the GDOT Repository for Online Access to Documentation and Standards (R-O-A-D-S) web page at: http://www.dot.state.ga.us/dot/preconstruction/r-o-a-d-s/Other%20Resources/index.shtml

[2] GDOT. *Context Sensitive Design Online Manual.*
Note: this is an online publication which is posted at: http://www.dot.state.ga.us/csd

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